Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Supporting Information

CO oxidation on SnO_2 surface enhanced by metal doping

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Additional data; Figure S1-S8

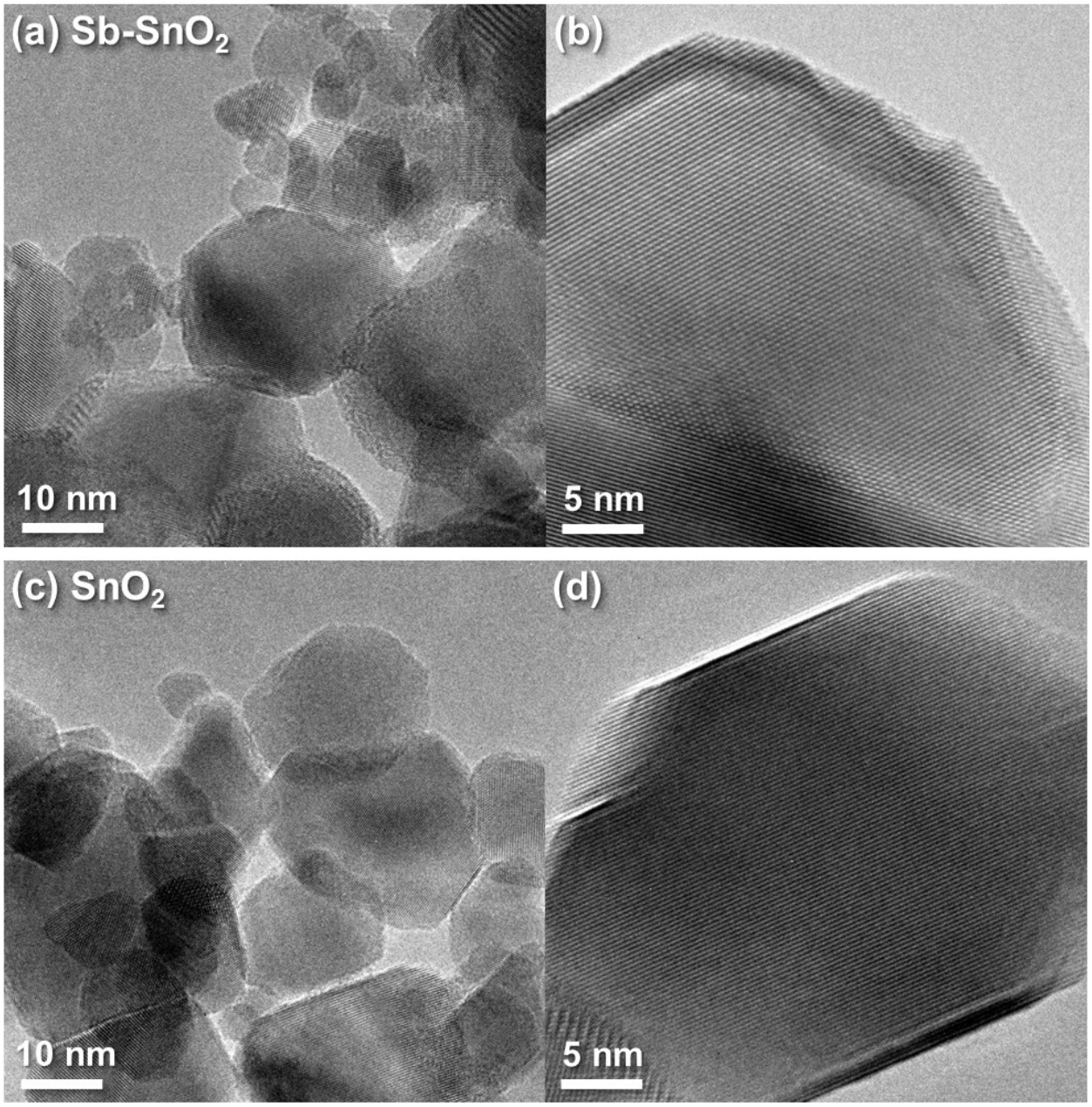

Figure S1. HR-TEM images of bare metal oxide supports reduced at 400 °C; (a, b) Sb-SnO_2 and (c, d) SnO_2.

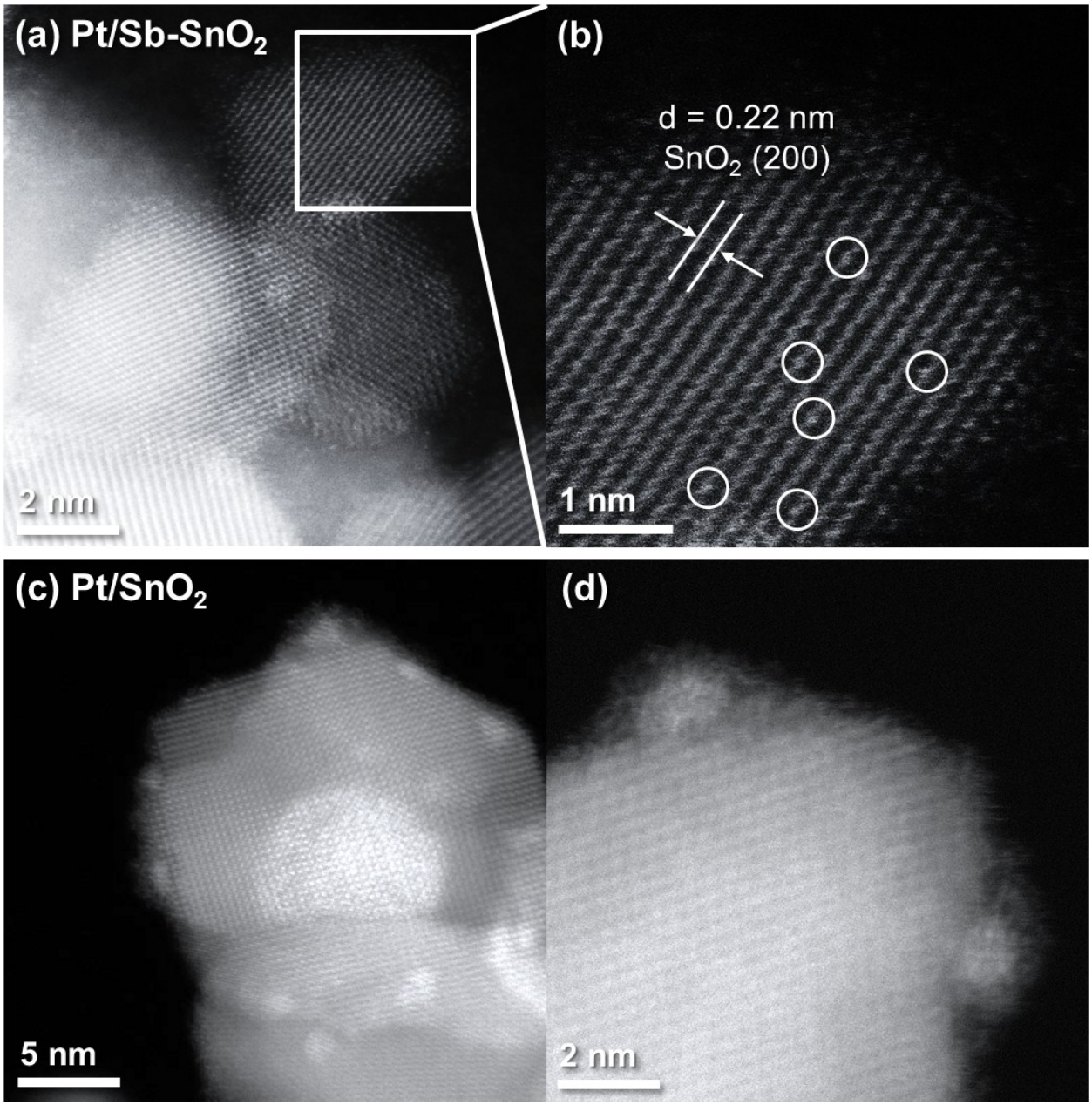

Figure S2. HAADF-STEM images of (a) 0.1 wt% Pt/Sb-SnO_2, (b) magnified image of (a), and (c, d) 0.1 wt% Pt/SnO_2 at different locations. White circles in (b) indicate single Pt atoms at SnO_2 (200) phase.

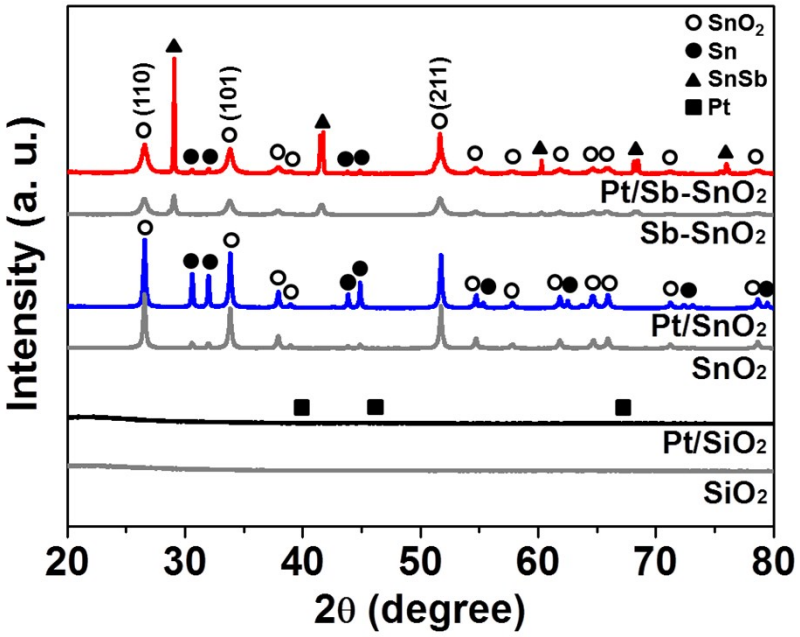

Figure S3. XRD patterns of the 0.1 wt% Pt/Sb-SnO_2, Pt/SnO_2, Pt/SiO_2, and their corresponding bare supports of Sb-SnO_2, SnO_2, SiO_2.

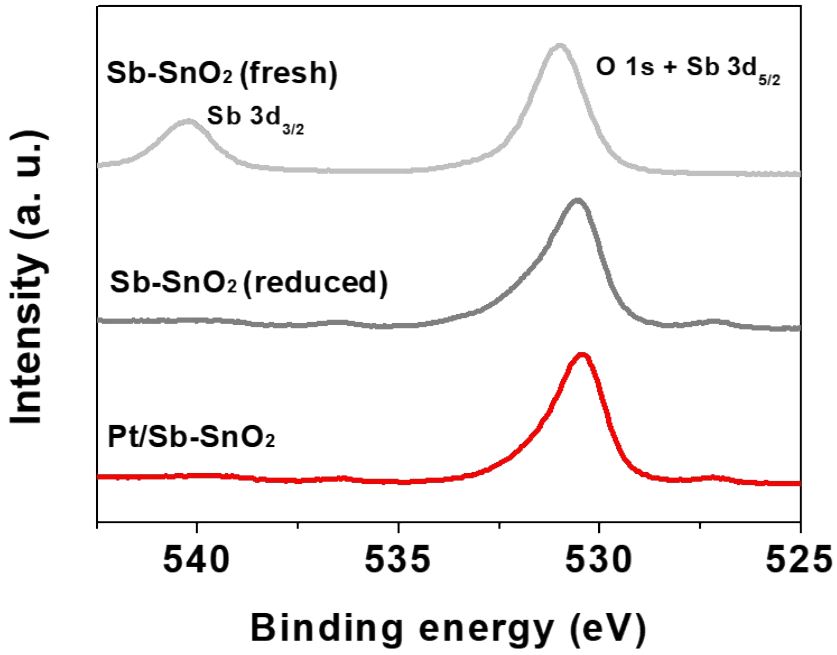

Figure S4. XPS Sb 3d spectra of fresh Sb-SnO_2, Sb-SnO_2 reduced at 400 °C, and 0.1 wt% Pt/Sb-SnO_2.

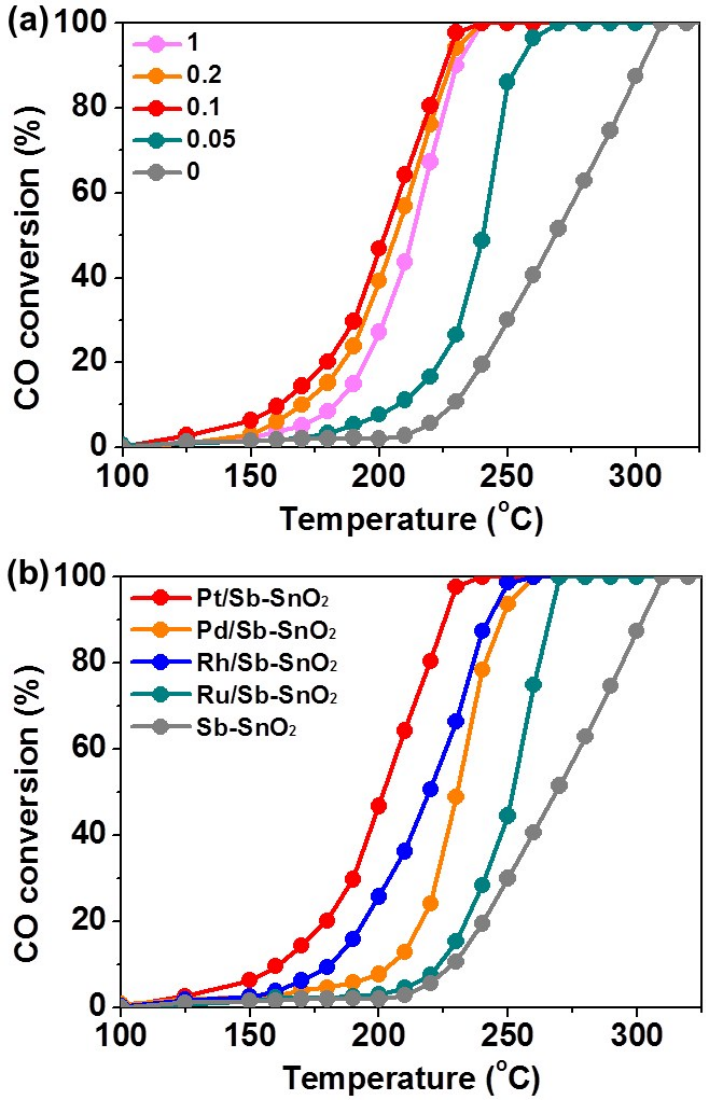

Figure S5. CO oxidation results for (a) Pt/Sb-SnO_2 with various Pt weight percentages and (b) 0.1 wt% M/Sb-SnO_2 (M = Pt, Pd, Rh, and Ru). CO oxidation was performed at 120,000 $ml \cdot g^{-1} \cdot h^{-1}$ with an inlet gas flow of 1% CO and 1% O_2 balanced with He.

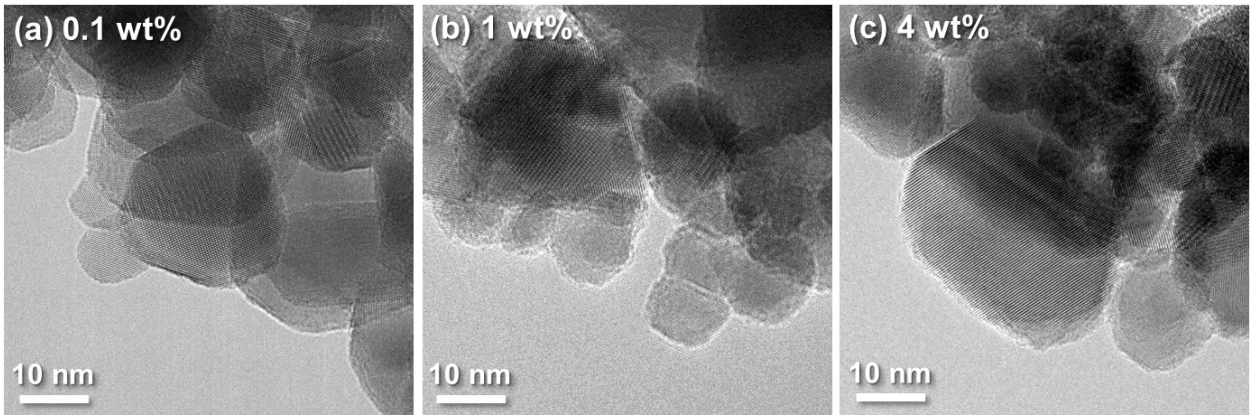

Figure S6. HR-TEM images of (a) 0.1, (b) 1, and (c) 4 wt% Pt/Sb-SnO_2 catalysts.

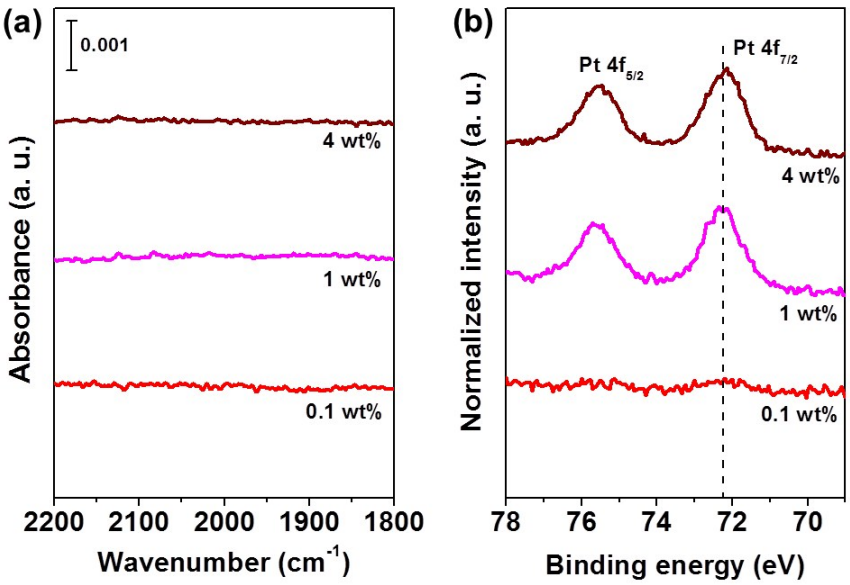

Figure S7. (a) DRIFT spectra for CO chemisorption and (b) XPS Pt 4f spectra of the 0.1, 1, and 4 wt% Pt/Sb-SnO_2 catalysts.

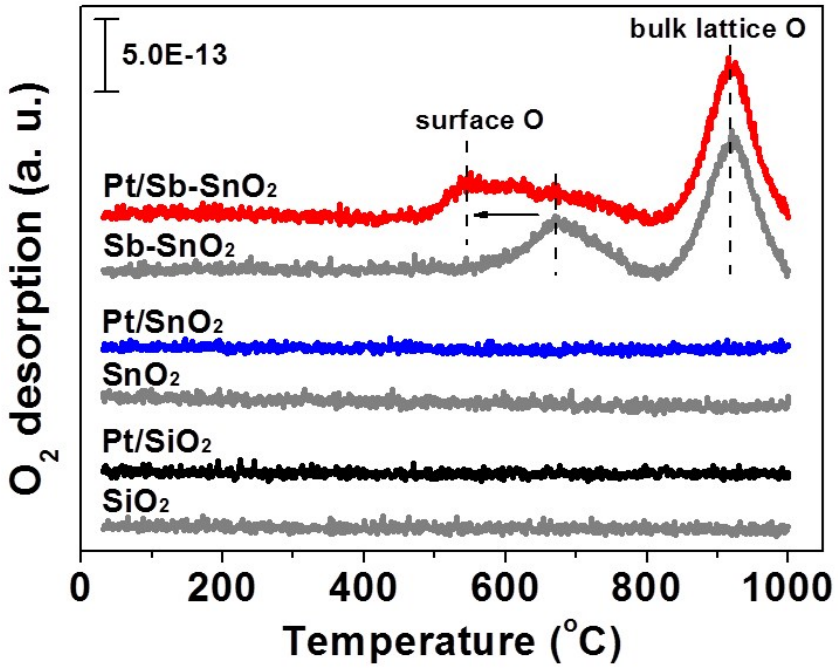

Figure S8. O_2-TPD results by monitoring O_2 (m/z 32) desorption with a mass spectrometer on the 0.1 wt% Pt/Sb-SnO_2, Pt/SnO_2, Pt/SiO_2, and their corresponding bare supports of Sb-SnO_2, SnO_2, SiO_2.